

NO. 20 BALL BEARING PUNCH

INSTRUCTIONS & PARTS LIST



CARE: Before attaching punch to spindle, grease punch head. Oil punch point.

FOR MAXIMUM OPERATOR SAFETY DO:

1. Read and understand this manual.
2. Use only No. 20 punches and dies marked with a W or R-W designed for this tool.
3. Be sure you punch within the twenty ton capacity of this tool. Type and thickness of material versus final hole size will give you this tonnage.
4. Wear safety glasses.

FOR MAXIMUM OPERATOR SAFETY DO NOT:

1. Use punches and dies that are chipped or dulled.
2. Punch over capacity of the tool.
3. Nibble. Punch a full hole not a half hole as punch may contact die.

OPERATION: One complete revolution (360 deg.) of the spindle lowers punch 1/2". When punching I beams, bevel dies should be used. Punch couplers have left hand thread. Punch should turn freely after installation. On contact with metal being punched the punch should not turn. Stripper bolts must be level at all times. To remove die, loosen die set screw and push die out. To replace, press die slowly into die holder using a piece of metal on top of die. Make sure die is not cocked. Tighten die set screw.

ASSEMBLY: To assemble spindle assembly, place a small amount of heavy grease in ball race of spindle. Slide stop collar on spindle with notch "A" in stop collar in down position. Place 32 ball bearings (11/32") in ball race of spindle and thread into ball race sleeve as far as possible; turn back until ball race can be seen. Align notch "A" in stop collar with "B" start of ball race in frame and tighten the three stop collar set screws. Screw ball race sleeve into punch body until bottom of ball race sleeve is even with bottom of punch body.

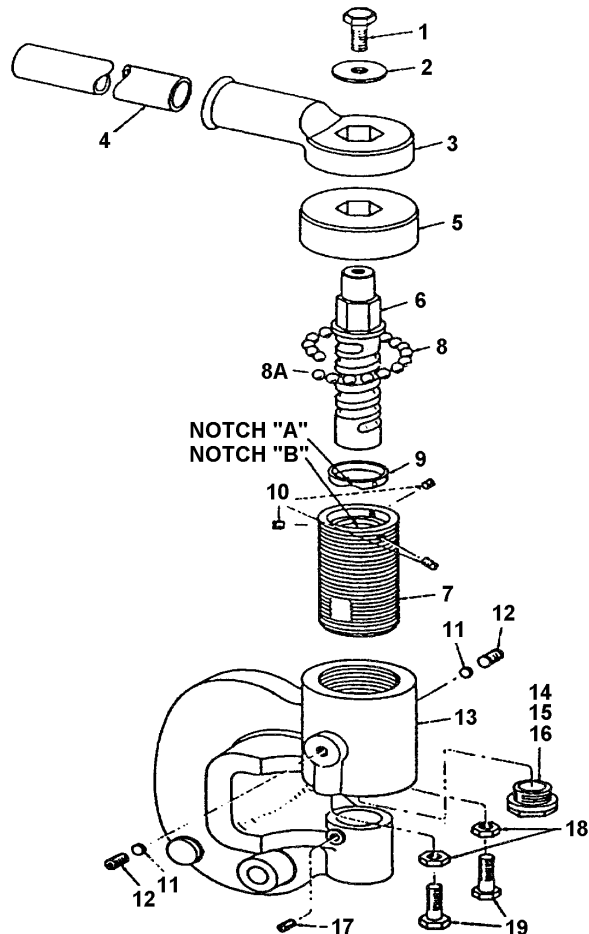
To assemble irregular shaped punches and dies, place die in frame. Do not tighten set screw. Fasten punch to spindle with coupler. Thread punch point through guide stripper and fasten guide stripper to frame using screws and spacers furnished. The guide stripper must be level with die and the punch point must never leave the guide stripper. Lower punch and align die and tighten die set screw. Raise punch and lower through die to recheck alignment.



ROPER WHITNEY

NO. 20 BALL BEARING PUNCH PARTS LIST

ITEM #	PART NO.	PART NAME	QTY.
1	601012128	Operating Handle Bolt 5/16-18 x 1/2 HHC	1
2	678033116	Operating Handle Washer	1
3	740460037	Operating Handle	1
4	138032026	48" Pipe Handle	1
5	730220082	Dust Cap	1
6	730770083	Spindle	1
7	730520084	Ball Race Sleeve	1
8	600093702	11/32 Ball Bearings	31
8A	600093700	5/16 Ball Bearing	1
9	730260085	Stop Collar	1
10	623012082	Stop Collar Set Screw 1/4-20 x 1/4 SSCP	3
11, 12	600010474	Ball Race Sleeve Set Screw w/Brass Plug 7/16-14 x 5/8 SS	2
13	730140080	Punch Body	1
14	331002011	11/16 Coupling Nut	1
15	331002025	3/4 Coupling Nut	1
16	331002035	13/16 Split Coupling Nut	1
17	621012083	Die Set Screw 1/4-20 x 5/16 Headless Set Screw	1
18	649023005	Stripper Bolt Nut 3/8-16	2
19	601012177	Stripper Bolts 3/8-16 x 1 1/4 Hex Head Cap Screw	2
--	230030200	Ball Race Sleeve Assy. Consists of items 6, 7, 8, 9, 10 & 14 fully assembled.	1



Tons of Pressure Required to Punch Mild Steel													
Round Hole Diameter	GA. IN.	20 .036	18 .048	16 .062	14 .075	12 .105	11 .120	10 .135	3/16" .188	1/4" .250	5/16" .312	3/8" .375	1/2" .500
1/8"		.4	.5	.6	.7	1.0	1.2	1.3	-	-	-	-	-
3/16"		.5	.7	.9	1.1	1.5	1.8	2.0	2.8	-	-	-	-
1/4"		.7	.9	1.2	1.5	2.1	2.4	2.6	3.7	4.9	-	-	-
5/16"		.9	1.2	1.5	1.8	2.6	2.9	3.3	4.6	6.1	7.8	-	-
3/8"		1.1	1.4	1.8	2.2	3.1	3.5	4.0	5.5	7.4	9.2	11.1	-
7/16"		1.2	1.6	2.1	2.6	3.6	4.1	4.6	6.4	8.6	10.7	12.8	-
1/2"		1.4	1.9	2.3	2.9	4.1	4.7	5.3	7.4	9.8	12.3	14.8	19.7
9/16"		1.6	2.1	2.6	3.3	4.6	5.1	5.9	8.3	11.1	13.9	16.5	22.0
5/8"		1.8	2.4	2.9	3.7	5.1	5.9	6.6	9.2	12.3	15.4	18.5	24.6
11/16"		1.9	2.6	3.2	4.0	5.7	6.2	7.3	10.1	13.5	17.0	20.2	26.9
3/4"		2.1	2.8	3.5	4.4	6.2	7.1	7.9	11.0	14.7	18.5	22.1	29.5
13/16"		2.3	3.1	3.8	4.8	6.7	7.6	8.6	12.0	16.0	20.0	23.8	31.8